

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

The features of claim 11 have been integrated into base claim 10, and claim 11 has been canceled. Additionally, the term "conversion" has been replaced in the claims with the mathematical term "transform," to better convey the nature of the matrix operation recited in claim 10. Also the nomenclature used to identify the component performing the matrix transformation has been changed from "converter" to "transformer," to promote greater clarity of the claimed subject matter. Thus, revised claim 10 more clearly recites the features of original claim 11 but is not narrower in scope than original claim 11; therefore, no estoppel should be deemed to attach thereto.

The claim amendments were not presented earlier due to the unforeseeability of the final rejection. Since no new issues are raised by the amendments, their entry after the final rejection is warranted.

Claims 10-18 were rejected under 35 USC §112, first paragraph. The Applicant respectfully traverses.

The Final Rejection proposes that the specification does not provide support for the feature recited in claim 10 of a converter that performs linear conversion of transmission signals

using [coefficients determined from] channel estimation values estimated in an estimator (see Final Rejection section 3, lines 5-7). More specifically, according to the Final Rejection, the specification does not provide support for a linear conversion of these signals based on the formula recited in claim 10 (section 3, lines 7-8).

However, both original and revised claim 10 recite the formula $|\text{Sig}_{\text{out}}|_{N \times 1} = |x|_{N \times M} \cdot |\text{Sig}_{\text{in}}|_{N \times 1}$, which is a generalized expression of the formula:

$$\begin{bmatrix} E \\ F \end{bmatrix} = \begin{bmatrix} x1 & y1 \\ x2 & y2 \end{bmatrix} \begin{bmatrix} A \\ B \end{bmatrix} \quad (1)$$

provided on page 11, line 14, of the specification. $|\text{Sig}_{\text{out}}|_{N \times 1}$ is a generalized mathematical expression of a matrix having N rows and one column of coefficients. In equation (1) set forth above, the corresponding matrix has coefficients E and F in a two-row, one-column matrix. Similarly, the matrix $|x|_{N \times M}$ recited in claim 10 is a matrix having N rows and M columns, and its corresponding matrix in equation 1 is a two-row, two-column matrix having coefficients x1, z2, y1, and y2. The matrix $|\text{Sig}_{\text{in}}|_{N \times 1}$ recited in claim 10 is a matrix having N rows and one column, and its corresponding matrix in equation 1 is a two-row, one-column matrix having coefficients A and B.

Although equation (1) represents an application of the claimed transform to a case where signals of two mobile stations are multiplexed, the specification states that the invention is not limited to such a case (see specification page 13, lines 12-15). Instead, the transform may be applied to instances where signals of any number of mobile stations are multiplexed (see specification page 13, lines 15-17). Claim 10 indicates this broader scope by identifying the number of matrix rows by N and the number of matrix columns by M. Accordingly, the specification provides express support for the matrix formula recited in claim 10.

Regarding the Final Rejection's proposal that the specification does not provide support for the claimed feature of linearly converting a plurality of transmission signals using [coefficients determined from] channel estimation values estimated in an estimator, the Applicant respectfully submits that the specification provides express support for this feature.

The specification states that demodulated signals A and B received respectively from each of two different mobile stations are provided to a channel estimation section 112 so that the states of the two wireless channels may be estimated (see specification page 9, line 22, through page 10, line 4). The channel estimation values obtained by channel estimation section

112 are conveyed to SIR calculation section 118 (page 10, lines 4-8). Signal transformation section 119 performs linear transformation of transmission signals A and B using the matrix transform of equation (1), and coefficients x_1 , x_2 , y_1 , and y_2 , which are determined by SIR calculation section 118 from the channel estimation values (page 11, line 5, through page 12, line 20). Accordingly, the specification provides express support for the claimed feature of linearly converting (e.g., by a matrix transform operation) a plurality of transmission signals using coefficients determined from channel estimation values estimated in an estimator.

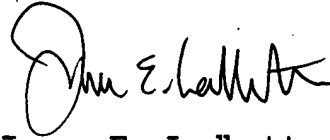
In accordance with the above discussion, the Applicant respectfully submits that the specification reasonably conveys to a skilled artisan that the inventor possessed the invention defined by claims 10 and 12-18 at the time that the application was filed. Therefore, withdrawal of the rejection under 35 USC 112, first paragraph, is warranted, and claims 10 and 12-18 should be allowed.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone

the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

Date: September 15, 2005
JEL/DWW/att

Attorney Docket No. L9289.01171
STEVENS DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, N.W., Suite 850
P.O. Box 34387
Washington, D.C. 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200